SECTOR PROFILE: PETROLEUM SECTOR IN CUBA

February, 1990

I) OVERVIEW AND BACKGROUND

a) Crude oil and its by-products.

The petroleum industry started in Cuba in 1859 when a small quantity of crude oil was produced for further conversion to kerosene.

Currently, 65% of Cuba's total energy production is based on fuel. Cuba is a net importer of crude oil, mainly from the Soviet Union. This large import volume is justified by Cuba's dependency on this product for power generation as well as the use of its by-products in other industries:

Fuel Oil

- to produce electric power
- for the nickel production
- for the steel industry
- for the cement industry
- for Cuban merchant fleet

Diesel Oil

- transportation (rail, trucks, buses, etc.)
- agriculture-related activities, i.e. irrigation, ploughing, fertilization, etc.
- construction-related activities, i.e. earth moving, erection of buildings, etc.

Gasoline

- transportation-related activities, both private and state

Kerosene

- home fuel

Turbocombustible

- air navigation

Liquefied petroleum gas

- home fuel for kitchens
- glass industry

b) Oil extraction in Cuba

The oil extraction in Cuba started in 1860, when an oil well was found in Motembo, province of Matanzas. Until 1959, approximately 200 oil wells had been drilled for exploration purposes. That year the oil extraction reached 28,000 MT.

In the last 30 years, the oil industry has become a priority sector to the Cuban Government and its development has been implemented with the assistance of the Soviet Union.

According to official figures, during the five-year period that will finish this year, i.e. 1985-1990, Cuba will have invested approximately 500 million U.S. dollars in the oil industry. Drilling will have increased 2.4 times over the previous period, the volume of geophysical research will have tripled and the number of wells doubled.

Gas extraction also progressed remarkably in the past two years, i.e. 1988/1989, and total production reached some 60 million cubic metres of what is known as "adjoining" gas (Cuba does not produce natural gas).

Amongst some of the most important works that have recently been completed in the oil industry are:

a) Pipeline Varadero-Cárdenas, which with a total length of 10 kms is designed to move up to one million two hundred metric tons of crude oil per year.

b) Pipeline of 47 kms in length from Matanzas harbour to the power plant located in Santa Cruz del Norte, Havana Province.

c) Super-tankers terminal in Matanzas harbour to facilitate the unloading and storage of the oil brought to Cuba by tankers with more than 100,000 tons capacity.

d) Construction of a pipeline to take crude oil from above-mentioned tanker base in Matanzas to the new oil refinery in Cienfuegos with a total length of 70 kms - currently in its final stages.

Cuba imports annually approximately ten million tons of oil and produces locally an average of 800,000 MT/year. Domestic oil production is primarily intended for:

- exports
- consumption by the cement industry and small electric plants (less than 50 megawatts)
- production of asphalt

In 1958, oil production in Cuba was only 50,500 MT. A large scale development program for this industry started in 1961, and by the year 1970 the local production totalled 159,100 MT. A production record was established in 1986 with a total of 938,000 MT. In 1988, the oil production was 717,000 MT. The targeted production for 1991 was set at around one million tons of crude oil. However, due to various reasons, among them the inefficiency in the

technology applied and the utilization of inadequate tools and equipment, etc., it is unlikely that total production would exceed 500,000 MT.

Cuban geology is very difficult. There are many faults that make drilling and oil extraction a very complicated exercise, but there is no doubt that possibilities to find oil in Cuba's subsoil are very real.

Most of the oil that has been found in Cuba so far is very thick. As Eastern European countries, mainly USSR and Romania, have developed a technology based on the type of oil mostly different from the Cuban oil, this technology cannot generally be used in Cuba. Canada, however, has a technology that can be easily applied in Cuba because of the similarity between Canadian and Cuban oil fields.

The Cubans have expressed much interest in the method for extracting oil by using electromagnetism. Currently, to drill 2200 metres, the Cubans take five months and they would like to be able to do this in a maximum of 90 days.

The changes taking place over the last few months in the Eastern European countries, and mainly in the USSR, suggest that a possible substantial decrease in the level of assistance from those countries to Cuba is likely to occur. Should this happen, a decisive reduction of quantities of raw materials, equipment and oil will be noted.

In order to cope with this situation, Cuba will no doubt try to increase its domestic production of oil.

There are approximately ten small and medium-sized oil deposits, mainly located in the northern gas-and-oil bearing area of the country, the largest in Boca de Jaruco, Havana Province, and in Varadero, Matanzas Province.

Names and characteristics of these deposits are as follows:

Varadero Oil Field (9 km^2)

The most promising. Its oil is heavy and found in the upper layer with high sulphur content - some 5% - and accompanied by much adjoining gas. This gas has a sulphur content of 7%.

Currently there are around one hundred wells that have been drilled vertically to 1700/1800 metres and which are producing about 300,000 MT/year.

This area is very similar to the one existing in, Cold Lake, Alberta, and apparently the best way to stimulate/ increase production is by using steam injection.

Cantel Oil Field (7 km South-East of Varadero Beach)

This deposit is located in the serpentine rock at an average depth of 800 metres. Production has significantly decreased and at this point in time they are pumping out only about 100,000 MT/year from 70 wells.

Las Guasimas Oil Field (around the old Varadero airport)

This deposit has not been well studied as yet and it is producing less than 10,000 MT/year. The petroleum found here is much lighter - 20/21 API degrees - and it does not contain sulphur. Average depth of wells is about 1200/1800 metres.

Varadero Sur Oil Field

It is producing about 10,000 MT/year and is very similar to that of Las Guasimas regarding quality of oil. It is considered to be a field with important oil reserves.

Camarioca Oil Field

This area has not yet been carefully studied. They have only drilled some 13 wells which produce some 9,000 MT/year of oil similar to the one found in Varadero Sur and Las Guasimas.

Marbella Oil Field

It was found only a few years ago. It is not being exploited at this time and its location is directly below Varadero Beach.

Chapelin Oil Field

It is located some six kilometres east of Marbella deposit and is not being exploited as yet because, as in the case of Marbella, it is so close to Varadero Beach that they are concerned that the beach may be polluted. The oil of this field is accompanied by five percent sulphur and important quantities of adjoining gas.

Bahía de Cárdenas Oil Deposit

For many years, USSR/UK/France/Cuba conducted geological studies and all of them agreed that there is petroleum here. They are currently drilling a well in the bay (some 1 1/2 kms south of Varadero Beach) that is already 2200 metres deep. It will be drilled until it reaches 3500 metres. In the near future, another well is going to be drilled in the bay.

Majagüillar/Martí area (40 kms east of Varadero)

This area is very similar to that of Varadero. They have already drilled a well that has reached 3400 metres but they are going to continue drilling until 5000 metres.

Currently, they are conducting three-dimensional studies and a more extensive geophysical evaluation of this promising oil field.

Boca de Jaruco Oil Field (50 kms east of City of Havana)

It has a total area of 7 km^2 and its oil reserves are calculated to be in the neighbourhood of 17 million MT. It produces a thick oil with a sulphur content between 5% and 7%. The wells of this field has decreased their production by 50% and now require water injections. Oil has been found in some instances at 1500 metres.

Cuba's refining capacity is as follows:

- Refinería Ñico López de La Habana: 3.9 million MT/year

- Refinería Hermanos Díaz de Stgo. de Cuba: 3.7 million MT/year

- Refinería Sergio Soto en Cabaiguán, Sancti Spíritus (small)

- Refinería de Cienfuegos (currently in its final construction stage), with a total refining capacity of 6 million MT/year (3 millions in the first phase and 3 millions in the second one). This facility will create the necessary basis for the development of the petro-chemical industry in Cuba because it will produce the necessary raw materials for plastics manufacturing. The Cubans are in fact trying to solve self-sufficiency of petroleum by-products by increasing the oil-refining capacity and by advancing and improving their petro-chemical and chemical industries.

- Counting on existing oilfields, approximately 22,000 MT of basic oils/year can be produced.

II) IMPORT MECHANISM

All imports are conducted via a series of state trading agencies each of which is responsible for a specific group of products or industry sector. In general terms, these agencies prepare the requests for quotation based on the list of requirements presented to them by the various users. Once these requirements have been consolidated, the responsible purchasing agency issues the requests for quotation to their various traditional suppliers. Normally, the requests for quotation are presented twice a year: during the last quarter of a year for the requirements of the first half of the following year, and during the first quarter of a year for the supplies needed during the second half of same year.

The criteria for acceptance can be described as follows:

- good delivery terms
- competitive pricing
- approved product quality
- availability of minimum 360-day financing term

For those Canadian companies interested in working with the Cuban oil industry, their main competitors are: France, UK, Mexico and Spain in this order.

III) EXPORT OPPORTUNITIES PRESENTED TO CANADIAN EXPORTERS

Cuba is totally committed to developing its oil exploration industry for the sake of reducing its dependency of Russian oil deliveries - some 10 million tons/year - as well as for creating another source of badly needed hard currency income from possible oil exports. In this regard, it is well known that Cuba, at this point in time, is re-exporting Russian oil

- with USSR agreement - to the international market. Cuba's oil re-export capability is dependent upon its success in saving oil originally intended for local consumption.

Within the development programs of the petroleum industry there is a considerable market potential for Canadian exporters in a large number of product areas, among them:

- drilling muds
- drills
- electric motors
- tools
- piping
- packing
- cables and wires
- control panels
- pump jacks
- chemical products to stimulate the oil wells
- purchase of second-hand equipment

Technical assistance in:

- well cementing
- cleaning of drilling muds
- seismic interpretation
- electromagnetic oil recovery

Also there is a good potential for industrial cooperation programs/technology transfer in following areas:

- refining of oil
- fuel production and distribution
- oil extraction
- personnel training
- cleaning systems for oil spills

The acquisition of specialized equipment and high-quality tools together with the possibility of receiving formal training programs within the petroleum industry will permit Cuba to improve the production efficiency as well as the production rates.

IV) CONSTRAINTS AFFECTING EXPORT PERFORMANCE OF CANADIAN FIRMS TO CUBA

Cuba's hard currency liquidity crisis has been exacerbated, among other causes, by the unavailability of fresh loans and credits from western financial institutions together with the uncertain level of international petroleum and sugar prices.

As a consequence, Cuba was forced to renegotiate its hard currency foreign debt and to halve its import budget from western suppliers to approximately 600 million U.S. dollars. This situation technically limits Cuba's import potential from market economy countries. However, exceptions are made when the product/service/technology required is destined to a priority sector of the Cuban economy such as the development of the local petroleum and power industries.

Success of a Canadian company will largely depend on credit facilities available. However, if credit is unavailable and the product/technology in question is essential to the industry, previous experience has shown that, given the priority attached to the oil industry, Cuba may be prepared to agree to a cash payment to satisfy the Cuban industry's requirements.

V) FINANCING FACILITIES/EXPORT INSURANCE PROGRAMS AVAILABLE TO CANADIAN COMPANIES

While there is no Canadian Government credit facility to Cuba, the following alternatives are available to Canadian exporters selling to Cuba:

a) A 30-million Canadian dollar revolving line of credit is available from the National Bank of Canada to the National Bank of Cuba. Canadian exporters may access this facility only after the Cuban Ministry of Foreign Trade has identified the contract as a "priority" and the National Bank of Cuba has issued the corresponding letter of credit payable upon presentation of shipping documents to the National Bank of Canada by the Canadian exporters. As well, the National Bank of Canada's credit facility is subject to the exporter's obtaining an EDC insurance against non-payment risks. The Canadian supplier collects payment on a sight basis.

b) Insurance program available from EDC to Cuba
Cuba is off cover by EDC on medium/long term programs. However, EDC is prepared to provide short term insurance coverage to Cuba on the basis of a letter of credit issued by the National Bank of Cuba. This EDC's short term insurance coverage is limited and dependent upon Cuba's ability to avoid payment in arrears to EDC.

VI) RECOMMENDATIONS TO CANADIAN EXPORTERS

The Post wishes to encourage interested Canadian suppliers to establish close contacts with Cuban officials listed in Annex I and advise them of their export capabilities and readiness to become an established supplier. Your initial approach is interpreted as a sign of good will and often requires serious and subsequent follow-ups. Patience and perseverance are needed when making your first contact with Cuba. These

conditions are particularly necessary during the early stages of your dealings, as the product evaluation process for a new supplier can be protracted and frustrating. After the successful evaluation of your products, you should plan a visit to your potential client in Cuba to obtain a better assessment of the market conditions and to establish a personal rapport with the buyer.

Any Canadian company interested in up-dating its contacts or exploring new market opportunities is welcome to contact the Canadian Embassy c/o Tino Romaguera, Commercial Division, P.O. Box 500 (HAVAN), Ottawa, Ontario K1N 8T7; telephone: 2-6516/17/27; telex: 51-1586 CAN CU.

ANNEX I

1) For the import of machinery for the petroleum industry and related spare parts including pumps:

CUBAEQUIPOS
Calle 23 No. 55
Vedado, Ciudad de La Habana
Attn: Sr. Porfirio Mederos, Director
Telephones: 70-2546 / 79-6051
Telex: 51-2443

2) For the import of drilling equipment for the oil industry:

ECIMETAL
Virtudes No. 152 e/ Industria y Crespo
Centro Habana, Ciudad de La Habana
Attn: Sr. Raúl Rodríguez, Director
Telephone: 99-2970
Telex: 51-1555

and also

3) ENERGOIMPORT
7ma. Ave. No. 2602
Miramar, Playa, Ciudad de La Habana
Attn: Sr. Alberto Unzaga, Vice-Director
Telephones: 2-8156 - 22-1489 - 28915
Telex: 51-1812

4) As main end-user for the oil industry:

MINISTRY OF BASIC INDUSTRY
Ave. Salvador Allende No. 666
Centro Habana, Ciudad de La Habana
Attn: Sr. Francisco Rodríguez, Deputy Minister
Telephone: 70-7711
Telex: 51-1325
and

UNION DE EMPRESAS DE PERFORACION Y EXPLOTACION DEL PETROLEO
Attn: Dr. Juan A. Fleites Melo, Director
Eng. Eduardo Canal, Technical Advisor

(through the Ministry of Basic Industry)